

WHAT IS CLAIMED IS:

1. A method of inducing blood vessel formation in an animal, comprising: administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
2. The method of Claim 1 wherein said sphingosine kinase, or analogue, fragment, or derivative thereof is administered to said animal by administering to said animal a polynucleotide encoding sphingosine kinase, or an analogue, fragment, or derivative thereof.
3. The method of Claim 2 wherein said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof is administered to said animal by administering to said animal an expression vehicle including said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
4. The method of Claim 3 wherein said expression vehicle further includes a polynucleotide encoding a protein selected from the group consisting of VEGF, FGF, IGF, angiopoietins, PD-EGF, TGF- β , HIF1- α , nitric oxide synthase, MCP-1, Interleukin-8, ephrins, NAP-2, ENA-78, GROW- α , and active fragments of tyrosyl-tRNA synthetase.
5. The method of Claim 3 wherein said expression vehicle is a viral vector.
6. The method of Claim 5 wherein said viral vector is an adenoviral vector.
7. The method of Claim 5 wherein said viral vector is a lentiviral vector.
8. The method of Claim 5 wherein said viral vector is a BIV vector.
9. The method of Claim 6 wherein said adenoviral vector is administered to said animal in an amount of from about 10^7 plaque forming units to about 10^{12} plaque forming units.
10. The method of Claim 9 wherein said adenoviral vector is administered to said animal in an amount of from about 5×10^8 plaque forming units to about 2×10^{11} plaque forming units.
11. The method of Claim 7 wherein said lentiviral vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{12} transducing units.
12. The method of Claim 11 wherein said lentivirus vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{12} transducing units.

13. The method of Claim 8 wherein said lentiviral vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{10} transducing units.
14. The method of Claim 13 wherein said adenoviral vector is administered to said animal in an amount of from about 5×10^5 transducing units to about 10^{10} transducing units.
15. The method of Claim 1 wherein said animal is a mammal.
16. The method of Claim 15 wherein said mammal is a primate.
17. The method of Claim 16 wherein said primate is a human.
18. A viral vector including a polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
19. The vector of Claim 18 wherein said viral vector further includes a polynucleotide encoding a protein selected from the group consisting of VEGF, FGF, IGF, angiopoietins, PD-EGF, TGF- β , HIF1- α , nitric oxide synthase, MCP-1, Interleukin-8, and ephrins.
20. The vector of Claim 18 wherein said vector is an adenoviral vector.
21. The vector of Claim 18 wherein said viral vector is a lentiviral vector.
22. The vector of Claim 18 wherein said viral vector is a BIV vector.
23. A method of expressing sphingosine kinase in an animal, comprising:
administering to said animal a polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
24. The method of Claim 23 wherein said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof is administered to said animal by administering to said animal an expression vehicle including said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
25. The method of Claim 24 wherein said expression vehicle is a viral vector.
26. The method of Claim 25 wherein said viral vector is an adenoviral vector.

27. The method of Claim 25 wherein said viral vector is a lentiviral vector.
28. The method of Claim 25 wherein said viral vector is a BIV vector.
29. A method for the prevention or the treatment of congestive heart failure in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
30. A method for the prevention or the treatment of myocardial ischemia in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
31. A method for the treatment of ischemia-reperfusion injury in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
32. A method for the treatment of peripheral arterial diseases in an animal comprising administering to said animal an effective amount of a sphingosine kinase, or an analogue, fragment, or derivative thereof.
33. The method of Claim 29, 30, 31 or 32 wherein said sphingosine kinase, or analogue, fragment, or derivative thereof is administered to said animal by administering to said animal a polynucleotide encoding sphingosine kinase, or an analogue, fragment, or derivative thereof.
34. The method of Claim 33 wherein said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof is administered to said animal by administering to said animal an expression vehicle including said polynucleotide encoding a sphingosine kinase, or an analogue, fragment, or derivative thereof.
35. The method of Claim 34 wherein said expression vehicle further includes a polynucleotide encoding a protein selected from the group consisting of VEGF, FGF, IGF, angiopoietins, PD-EGF, TGF- β , HIF1- α , nitric oxide synthase, MCP-1, Interleukin-8, and ephrins.
36. The method of Claim 34 wherein said expression vehicle is a viral vector.
37. The method of Claim 36 wherein said viral vector is an adenoviral vector

38. The method of Claim 36 wherein said viral vector is a lentiviral vector.
39. The method of Claim 36 wherein said viral vector is a BIV vector.
40. The method of Claim 29, 30, 31 or 32 wherein said animal is a mammal.
41. The method of Claim 40 wherein said mammal is a primate.
42. The method of Claim 41 wherein said primate is a human.